

=> d ibib abs ind l38 1-6

L38 ANSWER 1 OF 6 HCAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 2003:950040 HCAPLUS
DOCUMENT NUMBER: 140:19764
TITLE: Methods of inducing the expression of bone morphogenetic proteins (BMPs) and transforming growth factor-beta proteins (TGF- β s) in cells
INVENTOR(S): Mckay, William F.; Boden, Scott D.; Yoon, Sangwook T.
PATENT ASSIGNEE(S): USA
SOURCE: U.S. Pat. Appl. Publ., 81 pp., Cont.-in-part of U.S. Ser. No. 292,951.
CODEN: USXXCO
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 2
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 2003225021	A1	20031204	US 2003-382844	20030307
US 2003180266	A1	20030925	US 2002-292951	20021113
PRIORITY APPLN. INFO.:			US 2001-331321P	P 20011114
			US 2002-292951	A2 20021113
			US 1988-124238	A 19880729
			US 2000-959578	A 20000428

AB A method of inducing the expression of one or more bone morphogenetic proteins and/or transforming growth factor- β proteins in a cell is described. The method includes transfecting a cell with an isolated nucleic acid comprising a nucleotide sequence encoding a LIM mineralization protein operably linked to a promoter. The one or more bone morphogenetic proteins can be BMP-2, BMP-4, BMP-6, BMP-7 or combinations thereof. The transforming growth factor- β protein can be transforming growth factor- β 1 protein (TGF- β 1). Transfection may be accomplished ex vivo or in vivo by direct injection of virus or naked DNA, or by a nonviral vector such as a plasmid. The method can be used to induce bone formation in osseous cells or to stimulate proteoglycan and/or collagen production in cells capable of producing proteoglycan and/or collagen (e.g., intervertebral disk cells).

IC ICM A61K048-00

ICS C12N005-08; C12N015-861; C12N015-867

NCL 514044000; 424093200; 435456000; 435366000

CC 63-1 (Pharmaceuticals)

Section cross-reference(s): 3, 6, 14

ST bone morphogenetic protein transforming growth factor gene therapy; BMP TGF gene bone formation intervertebral disk disease; oligonucleotide transformation cell implant bone disease

IT Bone morphogenetic proteins

RL: BSU (Biological study, unclassified); THU (Therapeutic use); BIOL (Biological study); USES (Uses)

(2; methods of inducing the expression of bone morphogenetic proteins (BMPs) and transforming growth factor-beta proteins (TGF- β s) in cells)

IT Bone morphogenetic proteins

RL: BSU (Biological study, unclassified); THU (Therapeutic use); BIOL (Biological study); USES (Uses)

(4; methods of inducing the expression of bone morphogenetic proteins (BMPs) and transforming growth factor-beta proteins (TGF- β s) in

- cells)
- IT Bone morphogenetic proteins
RL: BSU (Biological study, unclassified); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(6; methods of inducing the expression of bone morphogenetic proteins (BMPs) and transforming growth factor-beta proteins (TGF- β s) in cells)
- IT Bone morphogenetic proteins
RL: BSU (Biological study, unclassified); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(7; methods of inducing the expression of bone morphogenetic proteins (BMPs) and transforming growth factor-beta proteins (TGF- β s) in cells)
- IT Adenoviridae
(AdLMP-1; methods of inducing the expression of bone morphogenetic proteins (BMPs) and transforming growth factor-beta proteins (TGF- β s) in cells)
- IT Gene, animal
RL: BSU (Biological study, unclassified); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(BMP-2; methods of inducing the expression of bone morphogenetic proteins (BMPs) and transforming growth factor-beta proteins (TGF- β s) in cells)
- IT Gene, animal
RL: BSU (Biological study, unclassified); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(BMP-4; methods of inducing the expression of bone morphogenetic proteins (BMPs) and transforming growth factor-beta proteins (TGF- β s) in cells)
- IT Gene, animal
RL: BSU (Biological study, unclassified); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(BMP-6; methods of inducing the expression of bone morphogenetic proteins (BMPs) and transforming growth factor-beta proteins (TGF- β s) in cells)
- IT Gene, animal
RL: BSU (Biological study, unclassified); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(BMP-7; methods of inducing the expression of bone morphogenetic proteins (BMPs) and transforming growth factor-beta proteins (TGF- β s) in cells)
- IT Proteins
RL: BSU (Biological study, unclassified); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(HLMP-1; methods of inducing the expression of bone morphogenetic proteins (BMPs) and transforming growth factor-beta proteins (TGF- β s) in cells)
- IT Proteins
RL: BSU (Biological study, unclassified); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(HLMP-1s; methods of inducing the expression of bone morphogenetic proteins (BMPs) and transforming growth factor-beta proteins (TGF- β s) in cells)
- IT Proteins
RL: BSU (Biological study, unclassified); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(HLMP-2; methods of inducing the expression of bone morphogenetic proteins (BMPs) and transforming growth factor-beta proteins (TGF- β s) in cells)
- IT Proteins

RL: BSU (Biological study, unclassified); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
 (HLMP-3; methods of inducing the expression of bone morphogenetic proteins (BMPs) and transforming growth factor-beta proteins (TGF- β s) in cells)

IT Proteins

RL: BSU (Biological study, unclassified); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
 (LIM domain-containing; methods of inducing the expression of bone morphogenetic proteins (BMPs) and transforming growth factor-beta proteins (TGF- β s) in cells)

IT Proteins

RL: BSU (Biological study, unclassified); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
 (LMP-1; methods of inducing the expression of bone morphogenetic proteins (BMPs) and transforming growth factor-beta proteins (TGF- β s) in cells)

IT Proteins

RL: BSU (Biological study, unclassified); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
 (RLMP; methods of inducing the expression of bone morphogenetic proteins (BMPs) and transforming growth factor-beta proteins (TGF- β s) in cells)

IT Gene, animal

RL: BSU (Biological study, unclassified); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
 (TGF- β 1; methods of inducing the expression of bone morphogenetic proteins (BMPs) and transforming growth factor-beta proteins (TGF- β s) in cells)

IT Cell

(annulus fibrosus; methods of inducing the expression of bone morphogenetic proteins (BMPs) and transforming growth factor-beta proteins (TGF- β s) in cells)

IT Spinal column, disease

(intervertebral disk hernia; methods of inducing the expression of bone morphogenetic proteins (BMPs) and transforming growth factor-beta proteins (TGF- β s) in cells)

IT Spinal column

(intervertebral disk; methods of inducing the expression of bone morphogenetic proteins (BMPs) and transforming growth factor-beta proteins (TGF- β s) in cells)

IT Stem cell

(mesenchymal; methods of inducing the expression of bone morphogenetic proteins (BMPs) and transforming growth factor-beta proteins (TGF- β s) in cells)

IT Adenoviral vectors

Bone formation

Gene therapy

Genetic vectors

Hematopoietic precursor cell

Mammalia

Mesenchyme

Molecular cloning

Nucleic acid hybridization

Ore genesis

Plasmid vectors

Retroviral vectors

Retroviridae

Transformation, genetic

Transplant and Transplantation

Viral vectors

Virus

(methods of inducing the expression of bone morphogenetic proteins (BMPs) and transforming growth factor-beta proteins (TGF- β s) in cells)

IT Oligonucleotides

RL: BSU (Biological study, unclassified); PRP (Properties); BIOL (Biological study)

(methods of inducing the expression of bone morphogenetic proteins (BMPs) and transforming growth factor-beta proteins (TGF- β s) in cells)

IT Bone morphogenetic proteins

RL: BSU (Biological study, unclassified); THU (Therapeutic use); BIOL (Biological study); USES (Uses)

(methods of inducing the expression of bone morphogenetic proteins (BMPs) and transforming growth factor-beta proteins (TGF- β s) in cells)

IT Nucleic acids

RL: BSU (Biological study, unclassified); THU (Therapeutic use); BIOL (Biological study); USES (Uses)

(methods of inducing the expression of bone morphogenetic proteins (BMPs) and transforming growth factor-beta proteins (TGF- β s) in cells)

IT Promoter (genetic element)

RL: BSU (Biological study, unclassified); THU (Therapeutic use); BIOL (Biological study); USES (Uses)

(methods of inducing the expression of bone morphogenetic proteins (BMPs) and transforming growth factor-beta proteins (TGF- β s) in cells)

IT Cytomegalovirus

(promoter; methods of inducing the expression of bone morphogenetic proteins (BMPs) and transforming growth factor-beta proteins (TGF- β s) in cells)

IT Cell nucleus

(pulposus; methods of inducing the expression of bone morphogenetic proteins (BMPs) and transforming growth factor-beta proteins (TGF- β s) in cells)

IT Animal cell

(somatic; methods of inducing the expression of bone morphogenetic proteins (BMPs) and transforming growth factor-beta proteins (TGF- β s) in cells)

IT Transforming growth factors

RL: BSU (Biological study, unclassified); THU (Therapeutic use); BIOL (Biological study); USES (Uses)

(β -; methods of inducing the expression of bone morphogenetic proteins (BMPs) and transforming growth factor-beta proteins (TGF- β s) in cells)

IT 630143-01-0 630143-02-1

RL: PRP (Properties); THU (Therapeutic use); BIOL (Biological study); USES (Uses)

(oligonucleotide; methods of inducing the expression of bone morphogenetic proteins (BMPs) and transforming growth factor-beta proteins (TGF- β s) in cells)

IT	630150-76-4	630150-77-5	630150-78-6	630150-79-7	630150-80-0
	630150-81-1	630150-82-2	630150-83-3	630150-85-5	630150-86-6
	630150-87-7	630150-88-8	630150-89-9	630150-90-2	630150-91-3
	630150-92-4	630150-93-5	630150-94-6	630150-95-7	630150-96-8
	630150-97-9	630150-98-0	630150-99-1	630151-00-7	630151-01-8
	630151-02-9	630151-03-0	630151-04-1	630151-06-3	630151-07-4
	630151-08-5	630151-10-9	630151-12-1	630151-13-2	

RL: PRP (Properties)

(unclaimed nucleotide sequence; methods of inducing the expression of bone morphogenetic proteins (BMPs) and transforming growth factor-beta proteins (TGF-βs) in cells)

IT 630150-75-3 630150-84-4 630151-05-2 630151-09-6 630151-11-0

RL: PRP (Properties)

(unclaimed protein sequence; methods of inducing the expression of bone morphogenetic proteins (BMPs) and transforming growth factor-beta proteins (TGF-βs) in cells)

IT 630151-14-3 630151-15-4 630151-16-5 630151-17-6 630151-18-7

630151-19-8 630151-20-1 630151-21-2 630151-22-3

RL: PRP (Properties)

(unclaimed sequence; methods of inducing the expression of bone morphogenetic proteins (BMPs) and transforming growth factor-beta proteins (TGF-βs) in cells)

L38 ANSWER 2 OF 6 HCAPLUS COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 2003:397004 HCAPLUS

DOCUMENT NUMBER: 138:397329

TITLE: cDNAs encoding rat and human LIM mineralization proteins and their use in treatment of disk degeneration and disk injury

INVENTOR(S): McKay, William F.; Boden, Scott D.; Yoon, Sangwook T.

PATENT ASSIGNEE(S): Medtronic Sofamor Danek, USA

SOURCE: PCT Int. Appl., 94 pp.

CODEN: PIXXD2

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 2.

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2003042368	A2	20030522	WO 2002-US36465	20021114
WO 2003042368	A3	20031016		
W:	AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SC, SD, SE, SG, SI, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW			
RW:	GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG			
US 2003180266	A1	20030925	US 2002-292951	20021113
EP 1465489	A2	20041013	EP 2002-780657	20021114
R:	AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, SK			
PRIORITY APPLN. INFO.:			US 2001-331321P	P 20011114
			US 2002-292951	A 20021113
			US 1988-124238	A 19880729
			US 2000-959578	A 20000428
			WO 2002-US36465	W 20021114

AB Methods of expressing LIM mineralization protein in non-osseous mammalian cells, such as stem cells or intervertebral disk cells (e.g., cells of the annulus fibrosus, or cells of the nucleus pulposus) are described. The methods involve transfecting the cells with an isolated nucleic acid comprising a nucleotide sequence encoding a LIM mineralization protein

operably linked to a promoter. Transfection may be accomplished ex vivo or in vivo by direct injection of virus or naked DNA, or by a nonviral vector such as a plasmid. Expression of the LIM mineralization protein can stimulate proteoglycan and/or collagen production in cells capable of producing proteoglycan and/or collagen. Methods for treating disk disease associated with trauma or disk degeneration are also described.

- IC ICM C12N
- CC 3-3 (Biochemical Genetics)
Section cross-reference(s): 1, 6, 13
- ST cDNA LIM mineralization protein human rat sequence; disk degeneration injury therapy LMP protein splicing isoform
- IT Bone morphogenetic proteins
RL: BSU (Biological study, unclassified); BIOL (Biological study) (2, LMP protein in stimulating synthesis of; cDNAs encoding rat and human LIM mineralization proteins and their use in treatment of disk degeneration and disk injury)
- IT Adenoviral vectors
(AdHLMP-1, LIM mineralization protein cDNA cloning in; cDNAs encoding rat and human LIM mineralization proteins and their use in treatment of disk degeneration and disk injury)
- IT Protein motifs
(LIM domain, in LMP proteins; cDNAs encoding rat and human LIM mineralization proteins and their use in treatment of disk degeneration and disk injury)
- IT Plasmid vectors
Retroviral vectors
Viral vectors
(LIM mineralization protein cDNA cloning in; cDNAs encoding rat and human LIM mineralization proteins and their use in treatment of disk degeneration and disk injury)
- IT Proteoglycans, biological studies
RL: BSU (Biological study, unclassified); BIOL (Biological study) (LIM mineralization protein in stimulating synthesis of; cDNAs encoding rat and human LIM mineralization proteins and their use in treatment of disk degeneration and disk injury)
- IT mRNA
RL: ANT (Analyte); BSU (Biological study, unclassified); ANST (Analytical study); BIOL (Biological study) (LIM mineralization protein; cDNAs encoding rat and human LIM mineralization proteins and their use in treatment of disk degeneration and disk injury)
- IT cDNA
RL: BSU (Biological study, unclassified); PRP (Properties); THU (Therapeutic use); BIOL (Biological study); USES (Uses) (LIM mineralization protein; cDNAs encoding rat and human LIM mineralization proteins and their use in treatment of disk degeneration and disk injury)
- IT Proteins
RL: BSU (Biological study, unclassified); PRP (Properties); THU (Therapeutic use); BIOL (Biological study); USES (Uses) (LMP (LIM mineralization protein), isoforms 1,2 and 3, of rat and human; cDNAs encoding rat and human LIM mineralization proteins and their use in treatment of disk degeneration and disk injury)
- IT Bone morphogenetic proteins
RL: BSU (Biological study, unclassified); BIOL (Biological study) (LMP protein in inducing synthesis of; cDNAs encoding rat and human LIM mineralization proteins and their use in treatment of disk degeneration and disk injury)
- IT Osteocalcins

- RL: BSU (Biological study, unclassified); BIOL (Biological study)
(LMP protein in stimulating secretion of; cDNAs encoding rat and human LIM mineralization proteins and their use in treatment of disk degeneration and disk injury)
- IT **Collagens**, biological studies
RL: BSU (Biological study, unclassified); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(LMP protein in stimulating synthesis of, as carrier for LMP protein implant in vertebral disk; cDNAs encoding rat and human LIM mineralization proteins and their use in treatment of disk degeneration and disk injury)
- IT **Aggrecans**
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(LMP protein in stimulating synthesis of; cDNAs encoding rat and human LIM mineralization proteins and their use in treatment of disk degeneration and disk injury)
- IT **Bone formation**
(LMP protein in; cDNAs encoding rat and human LIM mineralization proteins and their use in treatment of disk degeneration and disk injury)
- IT **RNA splicing**
(LMP protein mRNA; cDNAs encoding rat and human LIM mineralization proteins and their use in treatment of disk degeneration and disk injury)
- IT **Body, anatomical**
(back, disease, pain, lower; cDNAs encoding rat and human LIM mineralization proteins and their use in treatment of disk degeneration and disk injury)
- IT **Pain**
(back, lower; cDNAs encoding rat and human LIM mineralization proteins and their use in treatment of disk degeneration and disk injury)
- IT **Animal cell**
Gene therapy
Human
Mammalia
Nucleic acid hybridization
Rattus
(cDNAs encoding rat and human LIM mineralization proteins and their use in treatment of disk degeneration and disk injury)
- IT **Promoter (genetic element)**
RL: BSU (Biological study, unclassified); BUU (Biological use, unclassified); BIOL (Biological study); USES (Uses)
(cytomegalovirus, for LMP proteins synthesis; cDNAs encoding rat and human LIM mineralization proteins and their use in treatment of disk degeneration and disk injury)
- IT **Bone, disease**
(degenerative disk disease, spine stenosis; cDNAs encoding rat and human LIM mineralization proteins and their use in treatment of disk degeneration and disk injury)
- IT **Probes (nucleic acid)**
RL: ARG (Analytical reagent use); BUU (Biological use, unclassified); ANST (Analytical study); BIOL (Biological study); USES (Uses)
(for LMP protein cDNA; cDNAs encoding rat and human LIM mineralization proteins and their use in treatment of disk degeneration and disk injury)
- IT **Primers (nucleic acid)**
RL: ARG (Analytical reagent use); BUU (Biological use, unclassified); PRP (Properties); ANST (Analytical study); BIOL (Biological study); USES (Uses)
(for LMP protein cDNA; cDNAs encoding rat and human LIM mineralization

- proteins and their use in treatment of disk degeneration and disk injury)
- IT cDNA sequences
(for LMP proteins of human and rat; cDNAs encoding rat and human LIM mineralization proteins and their use in treatment of disk degeneration and disk injury)
- IT Drug delivery systems
(implants, LMP protein in; cDNAs encoding rat and human LIM mineralization proteins and their use in treatment of disk degeneration and disk injury)
- IT Drug delivery systems
(injections, LMP protein in; cDNAs encoding rat and human LIM mineralization proteins and their use in treatment of disk degeneration and disk injury)
- IT Spinal column, disease
(intervertebral disk hernia; cDNAs encoding rat and human LIM mineralization proteins and their use in treatment of disk degeneration and disk injury)
- IT Spinal column
(intervertebral disk; cDNAs encoding rat and human LIM mineralization proteins and their use in treatment of disk degeneration and disk injury)
- IT Spinal cord
(lumbar, fusion, LMP protein in gene therapy in; cDNAs encoding rat and human LIM mineralization proteins and their use in treatment of disk degeneration and disk injury)
- IT Bone formation
(mineralization, LMP protein in; cDNAs encoding rat and human LIM mineralization proteins and their use in treatment of disk degeneration and disk injury)
- IT Molecular cloning
(of LIM mineralization proteins; cDNAs encoding rat and human LIM mineralization proteins and their use in treatment of disk degeneration and disk injury)
- IT Protein sequences
(of LMP proteins of human and rat; cDNAs encoding rat and human LIM mineralization proteins and their use in treatment of disk degeneration and disk injury)
- IT Cell differentiation
(osteoblast, LMP protein in; cDNAs encoding rat and human LIM mineralization proteins and their use in treatment of disk degeneration and disk injury)
- IT Stem cell
(pluripotent, LIM mineralization protein mRNA in; cDNAs encoding rat and human LIM mineralization proteins and their use in treatment of disk degeneration and disk injury)
- IT Cytomegalovirus
(promoter for LMP proteins synthesis; cDNAs encoding rat and human LIM mineralization proteins and their use in treatment of disk degeneration and disk injury)
- IT Mutation
(splice site, LMP protein; cDNAs encoding rat and human LIM mineralization proteins and their use in treatment of disk degeneration and disk injury)
- IT Glycosaminoglycans, biological studies
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(sulfated, LMP protein in inducing synthesis of; cDNAs encoding rat and human LIM mineralization proteins and their use in treatment of disk degeneration and disk injury)
- IT Polymers, biological studies

- RL: DEV (Device component use); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
 (synthetic, as carrier for LMP protein containing cell used in intervertebral disk implant; cDNAs encoding rat and human LIM mineralization proteins and their use in treatment of disk degeneration and disk injury)
- IT Spinal column
 (vertebra, annulus fibrosus, nucleus pulposus, LIM mineralization protein mRNA in; cDNAs encoding rat and human LIM mineralization proteins and their use in treatment of disk degeneration and disk injury)
- IT 530167-58-9 530167-59-0 530167-62-5 530167-64-7
 RL: BSU (Biological study, unclassified); PRP (Properties); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
 (amino acid sequence; cDNAs encoding rat and human LIM mineralization proteins and their use in treatment of disk degeneration and disk injury)
- IT 256606-43-6, GenBank AC023788
 RL: BSU (Biological study, unclassified); PRP (Properties); BIOL (Biological study)
 (cDNAs encoding rat and human LIM mineralization proteins and their use in treatment of disk degeneration and disk injury)
- IT 530167-57-8 530167-60-3 530167-61-4 530167-63-6
 RL: BSU (Biological study, unclassified); PRP (Properties); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
 (nucleotide sequence; cDNAs encoding rat and human LIM mineralization proteins and their use in treatment of disk degeneration and disk injury)
- IT 530167-30-7 530167-31-8
 RL: ARG (Analytical reagent use); BUU (Biological use, unclassified); PRP (Properties); ANST (Analytical study); BIOL (Biological study); USES (Uses)
 (primer sequence; cDNAs encoding rat and human LIM mineralization proteins and their use in treatment of disk degeneration and disk injury)
- IT 530170-01-5, 3: PN: WO03042368 SEQID: 3 unclaimed DNA 530170-02-6
 530170-03-7 530170-04-8, 6: PN: WO03042368 SEQID: 6 unclaimed DNA
 530170-05-9, 7: PN: WO03042368 SEQID: 7 unclaimed DNA 530170-06-0, 8: PN: WO03042368 SEQID: 8 unclaimed DNA 530170-07-1 530170-08-2
 530170-09-3 530170-10-6 530170-11-7 530170-12-8 530170-13-9
 530170-14-0 530170-15-1 530170-16-2 530170-17-3 530170-18-4
 530170-19-5 530170-20-8 530170-21-9 530170-22-0 530170-23-1
 530170-24-2 530170-25-3 530170-26-4 530170-28-6 530170-29-7
 530170-30-0 530170-31-1 530170-33-3 530170-34-4 530170-35-5
 530170-36-6 530170-37-7 530170-38-8 530170-39-9 530170-40-2
 RL: PRP (Properties)
 (unclaimed nucleotide sequence; cDNAs encoding rat and human LIM mineralization proteins and their use in treatment of disk degeneration and disk injury)
- IT 530170-27-5
 RL: PRP (Properties)
 (unclaimed protein sequence; cDNAs encoding rat and human LIM mineralization proteins and their use in treatment of disk degeneration and disk injury)
- IT 530158-96-4
 RL: PRP (Properties)
 (unclaimed sequence; cDNAs encoding rat and human LIM mineralization proteins and their use in treatment of disk degeneration and disk injury)

L38 ANSWER 3 OF 6 HCAPLUS COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 2000:553459 HCAPLUS

DOCUMENT NUMBER: 133:155511

TITLE: Highly-mineralized osteogenic sponge compositions, and uses thereof

INVENTOR(S): McKay, William F.

PATENT ASSIGNEE(S): SDGI Holdings, Inc., USA

SOURCE: PCT Int. Appl., 34 pp.

CODEN: PIXXD2

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2000045871	A1	20000810	WO 2000-US3043	20000204
W: AE, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CR, CU, CZ, DE, DK, DM, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
RW: GH, GM, KE, LS, MW, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG				
CA 2362049	AA	20000810	CA 2000-2362049	20000204
EP 1150726	A1	20011107	EP 2000-905989	20000204
EP 1150726	B1	20031105		
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO				
JP 2002536077	T2	20021029	JP 2000-596990	20000204
AT 253385	E	20031115	AT 2000-905989	20000204
AU 772682	B2	20040506	AU 2000-27568	20000204
ES 2209820	T3	20040701	ES 2000-905989	20000204
PRIORITY APPLN. INFO.:				
			US 1999-118615P	P 19990204
			WO 2000-US3043	W 20000204

AB Osteogenic sponge compns. having enhanced osteoinductive properties for use in bone repair are described. The compns. include a quickly resorbable porous carrier, a more slowly resorbed mineral scaffold and an osteogenic factor, preferably a bone morphogenetic protein. The compns. enable increased osteoinductive activity while retaining a reliable scaffold for the formation of new bone at an implant site. Methods for therapeutic use of the compns. are also described.

IC ICM A61L027-22

ICS A61L027-56; A61L027-46; A61K038-18

CC 63-7 (Pharmaceuticals)

Section cross-reference(s): 2

ST osteogenic sponge morphogenetic protein bone implant

IT Bone morphogenetic proteins

RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); DEV (Device component use); PEP (Physical, engineering or chemical process); THU (Therapeutic use); BIOL (Biological study); PROC (Process); USES (Uses)

(2; highly-mineralized osteogenic sponge compns. for repair of bone)

IT Bone morphogenetic proteins

RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); DEV (Device component use); PEP (Physical, engineering or chemical process); THU (Therapeutic use); BIOL (Biological study); PROC (Process); USES (Uses)

(7; highly-mineralized osteogenic sponge compns. for repair of bone)

IT Proteins, specific or class
 RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); DEV (Device component use); PEP (Physical, engineering or chemical process); THU (Therapeutic use); BIOL (Biological study); PROC (Process); USES (Uses)
 (LMP (LIM-mineralization proteins); highly-mineralized osteogenic sponge compns. for repair of bone)

IT Ceramics
 (biocompatible; highly-mineralized osteogenic sponge compns. for repair of bone)

IT Bone formation
 Osteoblast
 Osteoclast
 Particle size distribution
 (highly-mineralized osteogenic sponge compns. for repair of bone)

IT Bone morphogenetic proteins
Collagens, biological studies
 Platelet-derived growth factors
 Steroids, biological studies
 RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); DEV (Device component use); PEP (Physical, engineering or chemical process); THU (Therapeutic use); BIOL (Biological study); PROC (Process); USES (Uses)
 (highly-mineralized osteogenic sponge compns. for repair of bone)

IT Bone
 (implant; highly-mineralized osteogenic sponge compns. for repair of bone)

IT Porosity
 (microporosity; highly-mineralized osteogenic sponge compns. for repair of bone)

IT Bone marrow
 (osteogenic enhancing factor of; highly-mineralized osteogenic sponge compns. for repair of bone)

IT Growth factors, animal
 RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); PEP (Physical, engineering or chemical process); THU (Therapeutic use); BIOL (Biological study); PROC (Process); USES (Uses)
 (osteogenins; highly-mineralized osteogenic sponge compns. for repair of bone)

IT Bone
 (particles of; highly-mineralized osteogenic sponge compns. for repair of bone)

IT Surgery
 (spinal fusion; highly-mineralized osteogenic sponge compns. for repair of bone)

IT Medical goods
 (sponges, osteogenic; highly-mineralized osteogenic sponge compns. for repair of bone)

IT Spinal column
 (vertebra, fusion of; highly-mineralized osteogenic sponge compns. for repair of bone)

IT Transforming growth factors
 RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); DEV (Device component use); PEP (Physical, engineering or chemical process); THU (Therapeutic use); BIOL (Biological study); PROC (Process); USES (Uses)
 (β -; highly-mineralized osteogenic sponge compns. for repair of bone)

IT Microglobulins

RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); DEV (Device component use); PEP (Physical, engineering or chemical process); THU (Therapeutic use); BIOL (Biological study); PROC (Process); USES (Uses)

(β -microglobulins; highly-mineralized osteogenic sponge compns. for repair of bone)

IT 10103-46-5, Calcium phosphate

RL: DEV (Device component use); PEP (Physical, engineering or chemical process); THU (Therapeutic use); BIOL (Biological study); PROC (Process); USES (Uses)

(biocompatible ceramics; highly-mineralized osteogenic sponge compns. for repair of bone)

IT 61912-98-9, Insulin like growth factor 62031-54-3, Fgf

RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); DEV (Device component use); PEP (Physical, engineering or chemical process); THU (Therapeutic use); BIOL (Biological study); PROC (Process); USES (Uses)

(highly-mineralized osteogenic sponge compns. for repair of bone)

REFERENCE COUNT: 9 THERE ARE 9 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L38 ANSWER 4 OF 6 HCAPLUS COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 2000:553458 HCAPLUS

DOCUMENT NUMBER: 133:155510

TITLE: Osteogenic paste compositions and uses thereof

INVENTOR(S): McKay, William F.

PATENT ASSIGNEE(S): SDGI Holdings, Inc., USA

SOURCE: PCT Int. Appl., 37 pp.

CODEN: PIXXD2

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2000045870	A1	20000810	WO 2000-US3024	20000204
W:	AE, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CR, CU, CZ, DE, DK, DM, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM			
RW:	GH, GM, KE, LS, MW, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG			
CA 2362046	AA	20000810	CA 2000-2362046	20000204
EP 1150725	A1	20011107	EP 2000-905983	20000204
R:	AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO			
JP 2002536076	T2	20021029	JP 2000-596989	20000204
AU 770196	B2	20040212	AU 2000-27564	20000204
US 2004002558	A1	20040101	US 2001-923117	20010806
PRIORITY APPLN. INFO.:			US 1999-118614P	P 19990204
			WO 2000-US3024	W 20000204

AB Described are osteogenic paste compns. with enhanced osteoinductive properties for use in bone repair. Compns. comprising a quickly resorbable paste carrier, a more slowly resorbed mineral matrix, and Bone Morphogenetic Protein (BMP) or other osteogenic factor are described which enable increased osteoinductive activity while retaining a reliable

scaffold for the formation of new bone at the implant site. Methods for making and methods for therapeutic use of the compns. are also disclosed.

IC ICM A61L027-22
ICS A61L027-46; A61K038-18; A61L027-58

CC 63-7 (Pharmaceuticals)

ST osteogenic bone paste implant

IT Bone morphogenetic proteins
RL: DEV (Device component use); PEP (Physical, engineering or chemical process); THU (Therapeutic use); BIOL (Biological study); PROC (Process); USES (Uses)
(2; osteogenic paste compns. and uses thereof)

IT Bone morphogenetic proteins
RL: DEV (Device component use); PEP (Physical, engineering or chemical process); THU (Therapeutic use); BIOL (Biological study); PROC (Process); USES (Uses)
(4; osteogenic paste compns. and uses thereof)

IT Bone morphogenetic proteins
RL: DEV (Device component use); PEP (Physical, engineering or chemical process); THU (Therapeutic use); BIOL (Biological study); PROC (Process); USES (Uses)
(6; osteogenic paste compns. and uses thereof)

IT Bone morphogenetic proteins
RL: DEV (Device component use); PEP (Physical, engineering or chemical process); THU (Therapeutic use); BIOL (Biological study); PROC (Process); USES (Uses)
(7; osteogenic paste compns. and uses thereof)

IT Proteins, specific or class
RL: DEV (Device component use); PEP (Physical, engineering or chemical process); THU (Therapeutic use); BIOL (Biological study); PROC (Process); USES (Uses)
(LMP (LIM-mineralization protein); osteogenic paste compns. and uses thereof)

IT Prosthetic materials and Prosthetics
(bioactive glass; osteogenic paste compns. and uses thereof)

IT Polymers, biological studies
RL: DEV (Device component use); PEP (Physical, engineering or chemical process); THU (Therapeutic use); BIOL (Biological study); PROC (Process); USES (Uses)
(biocompatible non-resorbable; osteogenic paste compns. and uses thereof)

IT Ceramics
(biocompatible; osteogenic paste compns. and uses thereof)

IT Bone
(**demineralized**; osteogenic paste compns. and uses thereof)

IT Coral
(hydroxyapatite of; osteogenic paste compns. and uses thereof)

IT Bone
(implant; osteogenic paste compns. and uses thereof)

IT Anti-inflammatory agents
(nonsteroidal; osteogenic paste compns. and uses thereof)

IT Antibiotics
Body temperature
Bone formation
Bone marrow
Fungicides
Osteoblast
Osteoclast
Particle size distribution
Spinal column
Wetting agents

- (osteogenic paste compns. and uses thereof)
- IT Gelatins, biological studies
Platelet-derived growth factors
Steroids, biological studies
RL: DEV (Device component use); PEP (Physical, engineering or chemical process); THU (Therapeutic use); BIOL (Biological study); PROC (Process); USES (Uses)
- (osteogenic paste compns. and uses thereof)
- IT Growth factors, animal
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); PEP (Physical, engineering or chemical process); THU (Therapeutic use); BIOL (Biological study); PROC (Process); USES (Uses)
- (osteogenins; osteogenic paste compns. and uses thereof)
- IT Bone marrow
(osteoprogenitor cell; osteogenic paste compns. and uses thereof)
- IT Drug delivery systems
Medical goods
(pastes; osteogenic paste compns. and uses thereof)
- IT Spinal column
(vertebra, fusion of; osteogenic paste compns. and uses thereof)
- IT Transforming growth factors
RL: DEV (Device component use); PEP (Physical, engineering or chemical process); THU (Therapeutic use); BIOL (Biological study); PROC (Process); USES (Uses)
- (β -; osteogenic paste compns. and uses thereof)
- IT Microglobulins
RL: DEV (Device component use); PEP (Physical, engineering or chemical process); THU (Therapeutic use); BIOL (Biological study); PROC (Process); USES (Uses)
- (β -microglobulins; osteogenic paste compns. and uses thereof)
- IT 56-81-5, Glycerol, biological studies 1306-06-5, Hydroxyapatite
7758-87-4, Tricalcium phosphate 61912-98-9, Insulin like growth factor
62031-54-3, Fgf
RL: DEV (Device component use); PEP (Physical, engineering or chemical process); THU (Therapeutic use); BIOL (Biological study); PROC (Process); USES (Uses)
- (osteogenic paste compns. and uses thereof)

REFERENCE COUNT: 9 THERE ARE 9 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L38 ANSWER 5 OF 6 HCAPLUS COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 1999:139773 HCAPLUS

DOCUMENT NUMBER: 130:200953

TITLE: A method of **crosslinking collagen**
-based material and bioprosthetic devices produced therefrom

INVENTOR(S): Hendriks, Marc; Verhoeven, Michel; Cahalan, Patrick T.; Torrianni, Mark W.; Fouache, Benedicte; Cahalan, Linda

PATENT ASSIGNEE(S): Medtronic, Inc., USA

SOURCE: Eur. Pat. Appl., 26 pp.

CODEN: EPXXDW

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 897942	A1	19990224	EP 1998-306595	19980818

EP 897942 B1 20040310

R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT,
IE, SI, LT, LV, FI, RO

US 6166184 A 20001226 US 1997-912778 19970818

PRIORITY APPLN. INFO.: US 1997-912778 A 19970818

AB Methods of **crosslinking collagen**-based material having **collagen** amine groups and **collagen** carboxyl groups are provided. The methods comprise blocking at least a portion of the **collagen** amine groups with a blocking agent to form blocked amine groups; contacting the **collagen**-based material having the blocked amine groups with a polyfunctional spacer; and activating at least a portion of the **collagen** carboxyl groups after blocking at least a portion of the **collagen** amine groups, wherein the polyfunctional spacer **crosslinks** the **collagen**-based material and wherein said contacting step may be effected before or after said activating step. Bioprosthetic devices made from these **crosslinked collagen**-based materials are also provided. **Crosslinking** involving the JEFFAMINE spacers shows the fastest rehydration, whereas glutaraldehyde **crosslinking** tends to be a bit slower. The highly hydrophilic **crosslinked collagen**-derived materials promote infiltration and diffusion of tissue fluid through the material matrix, providing supply of oxygen, nutritive substances, electrolytes and drainage of metabolites. Also, ingrowth of capillary blood vessels and cells is promoted, 25 and consequently the healing response is improved. In addition, hydrophilicity improves the blood compatibility of the material. **Collagen** samples **crosslinked** according to the method of the invention involving the Jeffamine D230 spacer had a cell growth inhibition of 25%, while cells with a deviant morphol. were not observed

IC ICM C08H001-06
ICS A61L027-00

CC 63-7 (Pharmaceuticals)
Section cross-reference(s): 45

ST **crosslinking collagen** bioprosthetic device manuf

IT Acylation
(agents; **crosslinking collagen**-based material for bioprosthetic devices manufacture)

IT Heart
(aortic valve; **crosslinking collagen**-based material for bioprosthetic devices manufacture)

IT **Collagens**, biological studies
RL: DEV (Device component use); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)
(**crosslinked**; **crosslinking collagen**-based material for bioprosthetic devices manufacture)

IT Biocompatibility
Calcification
Crosslinking
Transplant and Transplantation
(**crosslinking collagen**-based material for bioprosthetic devices manufacture)

IT Aldehydes, reactions
Azides
Ketones, reactions
RL: NUU (Other use, unclassified); RCT (Reactant); RACT (Reactant or reagent); USES (Uses)
(**crosslinking collagen**-based material for bioprosthetic devices manufacture)

IT **Collagens**, biological studies

RL: RCT (Reactant); THU (Therapeutic use); BIOL (Biological study); RACT (Reactant or reagent); USES (Uses)

(**crosslinking collagen**-based material for bioprosthetic devices manufacture)

IT 7732-18-5, Water, processes

RL: PEP (Physical, engineering or chemical process); PROC (Process) (absorption; **crosslinking collagen**-based material for bioprosthetic devices manufacture)

IT 1122-58-3, 4-Dimethylaminopyridine 2592-95-2, N-Hydroxybenzotriazole 6066-82-6, N-Hydroxysuccinimide 39743-84-5

RL: NUU (Other use, unclassified); USES (Uses) (**crosslinking collagen**-based material for bioprosthetic devices manufacture)

IT 66-25-1, Hexanal 111-30-8, Glutaraldehyde 123-38-6, Propanal, reactions 123-72-8, Butanal 420-04-2, Cyanamide 530-62-1, 1,1'-Carbonyldiimidazole 538-75-0, N,N'-Dicyclohexylcarbodiimide 616-02-4, Citraconic anhydride 693-13-0, N,N'-Diisopropylcarbodiimide 830-03-5, p-Nitrophenyl acetate 1865-01-6, p-Nitrophenyl formate 2466-76-4, 1-Acetylimidazole 2491-17-0 2635-84-9, p-Nitrophenyl butyrate 6066-82-6D, N-Hydroxysuccinimide, esters 9046-10-0, Jeffamine D 230 14464-29-0, N-Hydroxysuccinimidyl acetate 16357-59-8, 2-Ethoxy-1-ethoxycarbonyl-1,2-dihydroquinoline 25952-53-8, 1-Ethyl-3-(3-dimethylaminopropyl)carbodiimide hydrochloride 30364-55-7 74124-79-1, N,N'-Disuccinimidyl carbonate 94820-31-2 152305-87-8

RL: NUU (Other use, unclassified); RCT (Reactant); RACT (Reactant or reagent); USES (Uses) (**crosslinking collagen**-based material for bioprosthetic devices manufacture)

IT 74-94-2, Dimethylamine borane 75-22-9, Trimethylamine borane 4856-95-5 16940-66-2, Sodium borohydride 25895-60-7, Sodium cyanoborohydride 65605-36-9

RL: RCT (Reactant); RACT (Reactant or reagent) (**crosslinking collagen**-based material for bioprosthetic devices manufacture)

REFERENCE COUNT: 6 THERE ARE 6 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L38 ANSWER 6 OF 6 HCAPLUS COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 1999:7871 HCAPLUS

DOCUMENT NUMBER: 130:57274

TITLE: Bone graft composites and spacers

INVENTOR(S): McKay, William F.

PATENT ASSIGNEE(S): SDGI Holdings, Inc., USA

SOURCE: PCT Int. Appl., 56 pp.

CODEN: PIXXD2

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 9856433	A1	19981217	WO 1998-US11611	19980611
W:	AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GE, GH, GM, GW, HU, ID, IL, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM			
RW:	GH, GM, KE, LS, MW, SD, SZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI,			

CM, GA, GN, ML, MR, NE, SN, TD, TG

AU 9878185	A1	19981230	AU 1998-78185	19980611
AU 738218	B2	20010913		
EP 988070	A1	20000329	EP 1998-926323	19980611
EP 988070	B1	20040915		
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, FI				
JP 2002503992	T2	20020205	JP 1999-502905	19980611
AT 275981	E	20041015	AT 1998-926323	19980611
US 6261586	B1	20010717	US 1999-386560	19990831
PRIORITY APPLN. INFO.:			US 1997-873276	A 19970611
			WO 1998-US11611	W 19980611

AB A bone graft substitute including a composition of natural selectively deactivated bone material which has been processed to remove associated non-**collagenous** bone proteins, said bone material containing native **collagen** materials and naturally associated bone minerals and substantially free from native non-**collagenous** protein, and a therapeutically effective amount to stimulate bone growth of a bone growth factor in synergistic combination with said bone material. Spacers composed of the bone graft substitute composition and methods for using the spacers are also provided. A diaphysial cortical bone dowel was prepared as well as deactivated allograft and its composite with BMP-2 composite.

IC ICM A61L027-00

CC 63-7 (Pharmaceuticals)

ST bone graft composite spacer

IT Bone morphogenetic proteins

RL: PEP (Physical, engineering or chemical process); THU (Therapeutic use); BIOL (Biological study); PROC (Process); USES (Uses)
(2; bone graft composites and spacers)

IT Bone

(artificial; bone graft composites and spacers)

IT **Collagens**, biological studies

Proteins, general, biological studies

RL: BOC (Biological occurrence); BSU (Biological study, unclassified); PEP (Physical, engineering or chemical process); THU (Therapeutic use); BIOL (Biological study); OCCU (Occurrence); PROC (Process); USES (Uses)
(bone graft composites and spacers)

IT Growth factors, animal

RL: BOC (Biological occurrence); BSU (Biological study, unclassified); PEP (Physical, engineering or chemical process); THU (Therapeutic use); BIOL (Biological study); OCCU (Occurrence); PROC (Process); USES (Uses)
(bone-derived; bone graft composites and spacers)

IT Transplant and Transplantation

Transplant and Transplantation

(bone; bone graft composites and spacers)

IT Prosthetic materials and Prosthetics

(composites, implants; bone graft composites and spacers)

IT Bone

Bone

(transplant; bone graft composites and spacers)

IT 1306-06-5, Hydroxyapatite 7758-87-4, Tricalcium phosphate

RL: PEP (Physical, engineering or chemical process); PRP (Properties); THU (Therapeutic use); BIOL (Biological study); PROC (Process); USES (Uses)
(bone graft composites and spacers)

REFERENCE COUNT: 5 THERE ARE 5 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT